



## Project Factsheet

# NeoGel

## Multi-disciplinary training environment for next generation hydrogel-based smart bio-interactive materials

### Background

Smart resorbable hydrogels will play a key role in next-generation biomedicine, for instance as platform materials for tissue engineering. As these materials have a high potential to address a wide range of medical conditions, significant growth for the biomedical materials industry is forecast. To explore this opportunity and exploit the potential, highly-qualified and well-trained biomaterials experts are urgently required. NeoGel will address this need by providing cross-disciplinary training to four researchers in an exciting academia-industry collaboration focused on novel hydrogels.

### Objectives

The overall objective of the European Industrial Doctorate programme NeoGel is to train researchers with the multidisciplinary thinking, planning-ability and drive required to engage in a challenging field and to provide a lead for Europe in biomedical materials. This will be achieved through the development of a new biomaterials technology platform.

The training objective is the education of a new generation of materials researchers, who can apply the tools of (bio-) materials science and physics, material fabrication, (bio) medical science and with a view to commercialisation, within a collaborative environment. Traditional biomaterial research develops understanding of either material science or medical applications. NeoGel will provide these components and will add structured scientific and commercial training. This will be reinforced by the unique assembly of expertise and credibility in each of the four aspects that the different laboratory environments of the NeoGel partners provide.

The main scientific objective is to develop functional hydrogels. The programme will make use of translational approaches combining polymer synthesis, nanotechnology, analysis, advanced fabrication methods and biomedical testing. This will be complemented by commercialisation analysis and critical benchmarking. The partnership will place emphasis on the generation of safe biomaterials, and will insure that useful materials are scalable and can be prepared reproducibly. Basic, pre-implantation, biocompatibility will also be assessed.

#### Funding Programme:

This project has received funding from the European Union's Seventh Framework Programme under grant agreement no. 316973



#### Project Duration:

01/11/2012 – 31/10/2016

#### Project Budget:

1 million euro

#### Project Website:

[www.fp7-neogel.eu](http://www.fp7-neogel.eu)



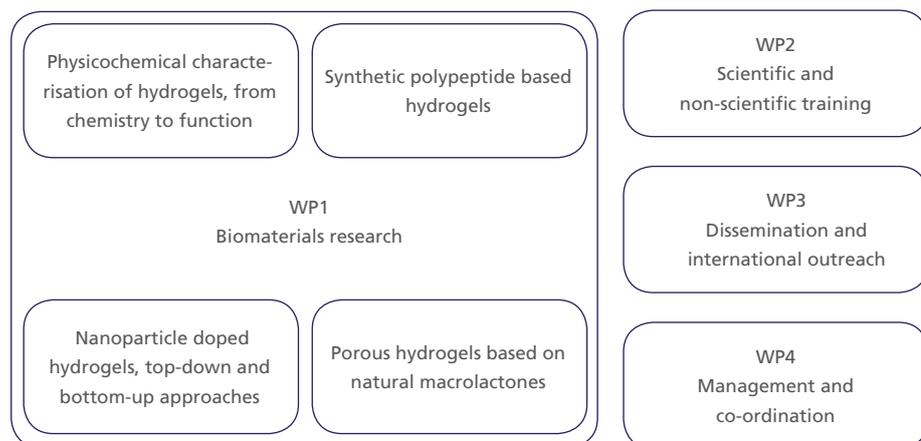
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### Activities

NeoGel will promote an innovative approach to new materials for tissue engineering by:

- Developing biomaterials, based on biocompatible hydrogels, that offer all the functionalities required to ensure the repair of damaged tissue.
- Providing the basis for a future, sustainable technological platform for hydrogel production.
- Training researchers to exploit the huge scope of biomaterials.
- Designing a novel doctoral industry-academia programme for the next generation of materials experts and biomaterials engineers.

Each project in the scientific work package (WP1) will be the focus for one of the four PhD students.



### Impact

The NeoGel programme offers immediate benefits to both the individual researchers and the training partners involved. These include promising career prospects in a growing biomaterials market for the fellows in the short term, and direct research results to be exploited by DSM and DCU.

The longer-term benefits include the potential impact of the proposed research on the ways in which bio-materials are developed and applied for tissue engineering. Advanced biomedical materials will play a significant role in the repair of damaged tissue to reinstall its structure and function, making it indistinguishable from the natural tissue and hence will revolutionise regenerative medicine and tissue engineering. Regenerative medicine holds promises not only to compensate for tissue donor shortages but also to improve the standard of living at higher age by compensating for age-related tissue degradation.

#### Project coordinator:

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#### Project participant:

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#### Associated partners:

- accelopment AG, CH
- Royal College of Surgeons in Ireland, IE
- Sterigenics Germany GmbH, DE
- University of Nottingham, UK
- University Medical Center Utrecht, NL